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09/701,090	02/27/2001	Steven A. McAlister	320038-401US	6212

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EXAMINER

COOLEY, CHARLES E

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 10/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/701,090

Applicant(s)

MCALISTER ET AL.

Examiner

Charles E. Cooley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 20 December 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2 SEP 2003 has been entered.

Priority

2. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d). All of the CERTIFIED copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

Drawings

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 20 DEC 2002 have been approved by the Examiner.

Specification

4. The substitute abstract is acceptable.
5. The title is acceptable.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 14-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAlister (US 5,462,513) in view of Clarkson (US 3,090,591).

McAlister (US 5,462,513) discloses the recited centrifugal concentrator substantially as claimed (Figures 2 and 12) but does not disclose the recited flow control valve members in the passages of the outlet cavities. The patent to Clarkson (US 3,090,591) discloses the recited muscle type flow control valve 12 (Figs. 1, 3, and 5) implemented for use in passages which carry solids which are suspended in a liquid (as in the discharge outlet cavities of the centrifugal concentrator of McAlister). The flow

control valve members 12 of Clarkson include a fluid inlet 74 and a fluid outlet 74 with a passage 22 there between and having a cross-sectional radius in the plane perpendicular to the longitudinal axis of the passage (Fig. 1); the passage being radially constrictible from fully open to a closed condition while maintaining a cross-sectional shape which is substantially circular over a major range of the radial constriction (col. 5, lines 7-44); wherein the flow control valve comprises a cylindrical elastomeric valve member 20 (Fig. 1) disposed within passage 22 and an annular elastomeric constrictor element 18 mounted coaxially around the cylindrical elastomeric valve member 20 as best seen in Fig. 1; the annular elastomeric constrictor element 18 having a central thickened region 42 for contacting and constricting the cylindrical elastomeric valve member 20; a valve body 12 having a passageway 57, 58 acting as a fluid supply and pressure relief passageway which extends from the outer surface of the valve member to the exterior of the valve body and which passageway communicates with a supply of fluid (col. 4, lines 21-26 and col. 5, lines 45-54); the passageway 57 extending axially within the valve body (Fig. 1); the passageway 57, 58 of the valve body communicating with a compressed gas supply for supplying gas under pressure to the exterior of the annular constrictor element 18 to thereby constrict the passage (col. 4, lines 21-26); the compressed gas may be air (col. 4, lines 24-25); the radially constrictible passage 22 of said flow control valve has a cross-sectional shape which is substantially circular over at least half said range of radial constriction of said passage (col. 5, lines 7-44); the radially constrictible passage of said flow control valve has a maximum dimension in the plane perpendicular to the longitudinal axis of said passage 22 which remains

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comparable to the dimension of said passage perpendicular to said maximum dimension over a substantial range of radial constriction of said passage 22 (col. 5, lines 7-44); the annular elastomeric constrictor element is held in a chamber in said valve body and is pre-compressed to fit said chamber (within 34 and col. 7, lines 10-20); the passageway 57, 58 communicating with the compressed gas supply for supplying gas under pressure to the exterior of said annular elastomeric constrictor element 18 has a portion which extends substantially axially within said valve body (Fig. 1). It therefore would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have substituted the control valves in McAlister (US 5,462,513) with flow control valves of the type disclosed by Clarkson (US 3,090,591) for the purposes of providing an unobstructed circular inlet port the diameter of which may be selectively varied to control flow between full flow and shut off while maintaining the port circular over the major portion of the control range to prevent turbulence and head losses (Col. 1, lines 9-45 and col. 2, line 53 through col. 3, line 5); to enable wear portions of the control valve to be inexpensively produced and readily removed and replaced when worn (col. 2, lines 56-59); and to shield all metal parts of the control valve from corrosible materials passing therethrough (col. 2, lines 60-62).

With respect claims 18-19 and 28-29, the patent to Clarkson (US 3,090,591) clearly suggests that said flow control valve can be adapted for passages of varying diameter (col. 6, lines 17-33). In view of this suggestion, it would have been an obvious matter of design choice to have altered the size of the flow control valves in Clarkson to any desired size, including the sizes recited in claims 18-19 and 28-29, since such a

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modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). Accordingly, one skilled in the art would have found it prima facie obvious to have adapted size of the flow control valves of Clarkson (USP 3,090,591) to the size of the outlet passages in the centrifuge of McAlister (USP 5,462,513).

Although the patent to Clarkson is held to disclose the subject matter of claims 22 and 31 regarding the pre-compression of the annular elastomeric constrictor element, the product-by-process limitations (i.e., the manner in which the flow control valve is assembled) do not impart patentability to the claims per MPEP 2113.

9. Claims 14-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knelson (US 5,338,284) in view of Clarkson (US 3,090,591).

Knelson (US 5,338,284) discloses the recited centrifugal concentrator substantially as claimed (Figures 1-3) but does not disclose the recited flow control valve members in the passages of the outlet cavities. The patent to Clarkson (US 3,090,591) discloses the recited muscle type flow control valve 12 (Figs. 1, 3, and 5) implemented for use in passages which carry solids which are suspended in a liquid (as in the discharge outlet cavities of the centrifugal concentrator of Knelson (US 5,338,284)). The flow control valve members 12 of Clarkson include a fluid inlet 74 and a fluid outlet 74 with a passage 22 there between and having a cross-sectional radius in

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the plane perpendicular to the longitudinal axis of the passage (Fig. 1); the passage being radially constrictible from fully open to a closed condition while maintaining a cross-sectional shape which is substantially circular over a major range of the radial constriction (col. 5, lines 7-44); wherein the flow control valve comprises a cylindrical elastomeric valve member 20 (Fig. 1) disposed within passage 22 and an annular elastomeric constrictor element 18 mounted coaxially around the cylindrical elastomeric valve member 20 as best seen in Fig. 1; the annular elastomeric constrictor element 18 having a central thickened region 42 for contacting and constricting the cylindrical elastomeric valve member 20; a valve body 12 having a passageway 57, 58 acting as a fluid supply and pressure relief passageway which extends from the outer surface of the valve member to the exterior of the valve body and which passageway communicates with a supply of fluid (col. 4, lines 21-26 and col. 5, lines 45-54); the passageway 57 extending axially within the valve body (Fig. 1); the passageway 57, 58 of the valve body communicating with a compressed gas supply for supplying gas under pressure to the exterior of the annular constrictor element 18 to thereby constrict the passage (col. 4, lines 21-26); the compressed gas may be air (col. 4, lines 24-25); the radially constrictible passage 22 of said flow control valve has a cross-sectional shape which is substantially circular over at least half said range of radial constriction of said passage (col. 5, lines 7-44); the radially constrictible passage of said flow control valve has a maximum dimension in the plane perpendicular to the longitudinal axis of said passage 22 which remains comparable to the dimension of said passage perpendicular to said maximum dimension over a substantial range of radial constriction of said passage 22

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(col. 5, lines 7-44); the annular elastomeric constrictor element is held in a chamber in said valve body and is pre-compressed to fit said chamber (within 34 and col. 7, lines 10-20); the passageway 57, 58 communicating with the compressed gas supply for supplying gas under pressure to the exterior of said annular elastomeric constrictor element 18 has a portion which extends substantially axially within said valve body (Fig. 1). It therefore would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have substituted the control valves in Knelson (US 5,338,284) with flow control valves of the type disclosed by Clarkson (US 3,090,591) for the purposes of providing an unobstructed circular inlet port the diameter of which may be selectively varied to control flow between full flow and shut off while maintaining the port circular over the major portion of the control range to prevent turbulence and head losses (Col. 1, lines 9-45 and col. 2, line 53 through col. 3, line 5); to enable wear portions of the control valve to be inexpensively produced and readily removed and replaced when worn (col. 2, lines 56-59); and to shield all metal parts of the control valve from corrosible materials passing therethrough (col. 2, lines 60-62).

With respect claims 18-19 and 28-29, the patent to Clarkson (US 3,090,591) clearly suggests that said flow control valve can be adapted for passages of varying diameter (col. 6, lines 17-33). In view of this suggestion, it would have been an obvious matter of design choice to have altered the size of the flow control valves Clarkson to any desired size, including the sizes recited in claims 18-19 and 28-29, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re*

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Rose, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). Accordingly, one skilled in the art would have found it prima facie obvious to have adapted size of the flow control valves of Clarkson to the size of the outlet passages in the centrifuge of in Knelson (US 5,338,284).

Although the patent to Clarkson is held to disclose the subject matter of claims 22 and 31 regarding the pre-compression of the annular elastomeric constrictor element, the product-by-process limitations (i.e., the manner in which the flow control valve is assembled) do not impart patentability to the claims per MPEP 2113.

Response to Amendment

10. Applicant's arguments filed 2 SEP 2003 have been fully considered but they are not deemed to be persuasive.

To have substituted the outlet control valves in the centrifuges of McAlister (USP 5,462,513) or Knelson (USP 5,338,284) with control valves of the type disclosed by Clarkson (USP 3,090,591) for the purposes of providing an unobstructed circular inlet port the diameter of which may be selectively varied to control flow between full flow and shut off while maintaining the port circular over the major portion of the control range to prevent turbulence and head losses; to enable wear portions of the control valve to be inexpensively produced and readily removed and replaced when worn; and

to shield all metal parts of the control valve from corrosible materials passing therethrough is considered prima facie obvious to one skilled in the art.

In response to Applicant's apparent argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). As evidenced by the disclosure of Clarkson (USP 3,090,591), the use of a radially constrictible control valve in an environment where solids are suspended in a liquid (as is the case in the outlet passages of the centrifuges of McAlister (USP 5,462,513) or Knelson (USP 5,338,284)) is clearly knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Applicant's disclosure.

Applicant has argued that "[e]xtreme centrifugal forces are present in the environment of centrifugal concentrators which cause difficulties for elastomeric valves." This is a peculiar conclusion as Applicant employs elastomeric valves of the type shown by Clarkson and as claimed in such an environment. If applying this conclusion to the instant invention and without exemplary exceptions (which are not provided by Applicant), one would assume that the elastomeric valves of the present invention have difficulty operating. The instant specification even admits that the valves used in the

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invention are modified versions of the type manufactured by The Clarkson Company.

Nonetheless, Applicant fails to establish what magnitude of forces are considered

"extreme forces" and provides no probative evidence to support such a conclusion.

Applicant's position on this point is considered to be speculative attorney's argument

unsupported by objective technical evidence on the issue. Arguments of counsel cannot

take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ

716, 718 (CCPA 1965); *In re Pearson*, 494 F.2d 1399, 1405, 181 USPQ 641, 646

(CCPA 1974).

With respect to Applicant's arguments on the record that the secondary reference

to Clarkson cannot be bodily incorporated into the primary references of McAlister or

Knelson, the test for obviousness is not whether the features of the reference may be

bodily incorporated into the other to produce the claimed subject matter but simply what

the references make obvious to one of ordinary skill in the art. *In re Bozek*, 163 USPQ

545 (CCPA 1969); *In re Richman*, 165 USPQ 509 (CCPA 1970); *In re Beckum*, 169

USPQ 47 (CCPA 1971); *In re Sneed*, 218 USPQ 385. The suggestion to modify the art

to produce the claimed invention need not be expressly stated in one or all of the

references used to show obviousness and instead may be an implied suggestion.

Cable Electric Products, Inc. v. Genmark, Inc., 770 F.2d 1015, 1025, 226 USPQ 881,

886 (Fed. Cir. 1985); *In re Sernaker*, 217 USPQ 1 (Fed. Cir. 1983); *In re Nilssen*, 7

USPQ2d 1500, 1502 (Fed. Cir. 1988). It is not necessary that the references actually

suggest, expressly or in so many words, the changes or improvements that applicant

has made. Rather, the test for combining references is what the combined teachings of

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the references as a whole would have suggested to those of ordinary skill in the art. *In re Sheckler*, 168 USPQ 716 (CCPA 1971); *In re McLaughlin*, 170 USPQ 209 (CCPA 1971); *In re Young*, 159 USPQ 725 (CCPA 1968); *Cable Elec.*, 226 USPQ at 886-87. The motivation to combine can arise from the knowledge that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. *Miles Lab., Inc. v. Shandon Inc.*, 27 USPQ2d 1123, 1128 (Fed. Cir. 1993). In the instant application, the secondary reference to Clarkson makes obvious or suggests to one of ordinary skill in the art the provision of providing radially constrictible control valves in a passageway through which solids suspended in a liquid are flowing (as would be found in the centrifugal concentrator art).

While there must be some suggestion or motivation for one of ordinary skill in the art to combine the teachings of references, it is not necessary that such be found within the four corners of the references themselves; a conclusion of obviousness may be made from common knowledge and common sense of the person of ordinary skill in the art without any hint or suggestion in a particular reference. *In re Bosek*, 416 F.2d 1385, 163 USPQ 545 (CCPA 1969). Further, in an obviousness assessment, skill is presumed on the part of the artisan, rather than the lack thereof. *In re Sovish*, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985).

With respect to the applied references, the examiner has considered all of the disclosure of each reference for what it would have fairly taught one of ordinary skill in the art. *In re Boe*, 355 F.2d 961, 148 USPQ 507 (CCPA 1966). Additionally, the specific teachings of each reference and the inferences which one skilled in the art

would have reasonably been expected to draw from the disclosure has been taken into account. *In re Preda*, 401 F.2d 825, 159 USPQ (CCPA 1968). On the basis of the knowledge and level of skill in the art at the time of applicant's invention, as reflected by the applied references, the examiner concludes that the rejections under 35 USC 103 are well founded.

Applying the test for obviousness set forth in *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981), which is what the combined teachings of the references would have suggested to those of ordinary skill in the art, the examiner concludes that one having ordinary skill in the art would have found it prima facie obvious to have substituted the control valves in the centrifuges of McAlister or Knelson with radially constrictible elastomeric control valves in view of the teachings of Clarkson.

With respect to the argument that the prior art must contain something to suggest the desirability of the combination, it is noted that to justify combining reference teachings in support of a rejection under 35 USC 103, it is not necessary that a device shown in one reference be capable of being physically inserted into the device shown in the other or that the prior art suggest expressly the changes or possible improvements the applicant has made. It is only necessary that knowledge clearly present in the prior art was applied. *In re Keller*, supra; *In re Sernaker*, 702 F.2d 989, 217 USPQ 1 (Fed. Cir. 1983). The examiner has applied only knowledge clearly present in the prior art as evidenced by the patent to Clarkson in the rejections of the pending claims and the rejections are thus proper.

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Contrary to the particular arguments filed 2 SEP 2003, the patent to Clarkson clearly contemplates the use of a compressed gas such as air to activate the flow control valves as explained in the rejections. The teachings of Clarkson are therefore not restricted to the use of just a hydraulic fluid to activate the valves as Applicant asserts. Accordingly, there is no unobvious difference between the claimed subject matter and the teachings of McAlister in view of Clarkson or Knelson '284 in view of Clarkson.

Since the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been prima facie obvious at the time the invention was made, to a person having ordinary skill in the art, from the combined teachings of the references, the rejections under 35 USC 103(a) are considered proper.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited foreign references show centrifuges with valve controlled discharge outlets.

12. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE**

FINAL even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (703) 308-0112. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in cursive script, appearing to read "Charles Cooley".

Charles E. Cooley
Primary Examiner
Art Unit 1723

09 October 2003